Next_Tick_Time, then that particular calendar must be ticked. The Next_Tick_Time will then be incremented by the Increment, which essentially schedules the calendar again for some time in the future. The Increment for each calendar is chosen based on the rate of the Master Clock and the rate of the port that the calendar services. Each calendar Increment can be chosen so that the calendar is ticked at the cell rate of the port.

Here is some pseudo-code that illustrates the algorithm described above:

```
Service_Master_Clock_Event_Begin:
    Global_Time = GlobalTime + 1
    for each calendar
      if Global_Time >= Next_Tick_Time
          tick the calendar & send a cell
          Next_Tick_Time = Next_Tick_Time + Increment
      endif
    next
Service_Master_Clock_Event_End
```

With this method, all the calendars servicing ports with different data rates can be ticked at their appropriate cell rate, using only the single input timing reference.

While particular embodiments of the invention have been described and illustrated it will be apparent to one skilled in the art that still other variations to the basic concept can be implemented. It is to be understood that such variations will also fall within the scope of the invention as defined by the appended claims.

We claim:

1. In a data traffic management system having a plurality of output ports for servicing data traffic of different data rates and a scheduling device having a plurality of data calendars for shaping data traffic destined for each of said output ports, a single timing reference to schedule transmission of data to appropriate output ports comprising:

timing means to generate a clock pulse based on the data rate of the output port having the fastest data rate;

counter means to continually count the clock pulses following an initialization event;

increment means to dynamically compare the accumulated number of clock pulses with predetermined increments for each calendar based on the data rate assigned thereto; and

threshold means responsive to inputs from said increment means to control transmission of data traffic from each of said calendars.

2. A timing reference as defined in claim 1 wherein said clock pulse is equal to the data rate of the data traffic of the output port having the fastest data rate.

3. A timing reference as defined in claim 2 wherein said threshold means controls said calendar means to prevent transmission of data traffic in response to an input from said increment means.

4. A timing reference as defined in claim 1 further comprising a first-in first-out buffer between said calendars and said output ports.

5. A timing reference as defined in claim 1 wherein an input from said increment means causes said counter means to be re-initialized.

6. A timing reference as defined in claim 1 wherein said clock pulse is n times faster than the data rate of the output port having the fastest data rate.

7. A timing reference as defined in claim 6 wherein said threshold means controls said calendar means to transmit data traffic in response to an input from said increment means.

8. A timing reference as defined in claim 7 wherein said clock pulse is at least 10 times faster than the data rate of the fastest output port.

9. A method of providing a timing reference to a data traffic management system, the system having a plurality of output ports each configured to transmit data at a different data rate and a scheduling system having a calendar for shaping data traffic for delivery to each of said output ports, the method comprising:

continually generating a clock pulse based on the data rate of the output port having the fastest data rate;

counting the accumulated clock pulses following an initialization event;

dynamically comparing the accumulated clock pulses with predetermined increment values for each calendar based on an assigned data rate for each calendar; and

controlling transmission of data from said calendars to appropriate output ports in response to the accumulated clock generated by threshold means when the accumulated clock pulses and increment value reaching a threshold respecting each calendar.

10. A method as defined in claim 9 wherein the clock pulse equals the fastest data rate and the data transmitted from the output ports is controlled such that no data is transmitted in response to an input signal.

11. A method as defined in claim 9 wherein the clock pulse rate is 'n' times faster than the fastest data rate and the data transmitted from the output port is controlled such that data is transmitted in response to an input signal.

12. A method as defined in claim 11 wherein 'n' is at least 10.

* * * * *